Monitoring for Success:
How will we know the rats are gone?

Only monitoring and time will tell if the project is successful. Thus far, we have found no sign of rats on Anacapa Island. Rats can survive in very small and isolated areas. Over time we are using several monitoring methods to determine if the treatment removed 100% of the rat population.

To maximize the chance that a rat will be detected we monitor in prime rat habitat where good protective cover exists or near sources of food such as the intertidal zone. We use various techniques and, most importantly, repeat these over time. We are also using multiple indicators that will allow us to detect rats. The methods include:

Direct Indicators
Sighting or capture of animals, where a rat is seen or caught.

Chew blocks (Figure 1), where rats chew on a wax block and leave behind impression of their teeth.

Tracking boards, where rats leave their footprints behind on paper. Multiple traps, blocks and boards are placed in prime rat habitats.

Figure 1. *Wax Chew Block used for indicators of rat activity.*

Indirect Indicators

Ecological Changes
The most dramatic evidence of the presence/absence of rats on Anacapa will be changes in the island ecosystem, especially for the plants and animals that were directly or indirectly impacted by rats.

For example, the small crevice nesting seabirds such as Xantus's Murrelet, are highly susceptible to rat predation. If the rats are gone, the predation of eggs, chicks and adults will be reduced (Figure 2) and, the numbers of murrelets breeding on the island should increase. In addition, murrelets will start to use habitat that the rats had previously excluded them from. Murrelets have already been documented nesting in areas that they were previously excluded from, including Cat Rock and the Landing Cove on East Anacapa. These changes suggest that the rats on Anacapa Island have been successfully removed.

Figure 2. *Monitoring for rat predation using clay eggs placed in prime Xantus's Murrelet breeding habitat. Prior to eradication on Middle and West Island, rat predation on eggs was 83%. After the eradication on East Anacapa, rat predation on eggs was reduced to 0%.*

Time
The most critical factor in confirming that rats are not present on the islands is to repeat the monitoring over time. As time passes, the signs of ecosystem recovery along with the continued absence of any rat sign will provide conclusive evidence that the rats have been removed.